

SOMMERA [RUBIACEAE]

IN

NORTH AMERICA

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Standley treated the genus Sommerera in the North American Flora in 1921 (31: 144-145) and credited five species to the genus. A review of the genus was needed for the Flora of Guatemala in order to know what species were in Guatemala.

The genus Sommerera was described in 1835 by Schlechtendahl based upon a specimen collected by Schiede at Hacienda de la Laguna in Vera Cruz, Mexico. Since that time eight additional species from North America have been credited to the genus. The oldest of these was Petesia grandis Bartl. ex DC., described in 1830 and later transferred to Sommerera by Standley. Petesia grandis was collected by Haenke somewhere between Acapulco and Mexico City. Standley and others have used the name Sommerera grandis for a complex that contains not fewer than eight species distributed from central Mexico to Panama and from sea level to 1,600 meters or more. Three of these species have acceptable names, - S. grandis, S. donnellsmithii and S. guatemalensis. Four of the species put into this complex seem to be easily distinguished one from another and are described and discussed below. In addition to these I will mention all of the Sommeras known from North America and cite specimens that I have seen.

I wish to thank the curators of the Herbarium of the University of Michigan and the United States National Herbarium for the loan of critical materials.

SOMMERA ACUMINATA Oersted ex Standl. Journ. Wash. Acad. Sci. 17: 340. 1927. - The species lacks the obvious lineolate tertiary nerves found in all other species of Sommerera. It may be a Rondeletia but the specimen seen (type?) had but a single flower which I did not dissect.

SOMMERA ARBORESCENS Schlecht. Linnaea 9: 602. 1835. - A distinctive species known to me only Vera Cruz and Chiapas, Mexico. I have seen the following specimens:

Mexico: Liebmann 11713, 11714, 11716, 11717, 11718, 11722 (all US); Miranda 8217 (US), 9181 (US); Purpus 215 (US), 194 (US), 417 (US), 2062 (US, F), 10707 (US), 14174 (F); Rose & Hough 4318 (US); Schiede 272 (F, US, isotypes); Ventura 1101 (F).

SOMMERA CHIAPENSIS Brandegee, Univ. Cal. Publ. Bot. 6: 196. 1915. - A distinctive species with small glabrous calyx lobes. Known from the type collection from Mexico (Chiapas), Purpus 7263 (US, F), and two collections from western Guatemala, Steyermark 37205 (F), 37441 (F).

SOMMERA DONNELLSMITHII Standl. Contr. U. S. Nat. Herb. 17: 436. 1914. S. mesochora Standl. l.c. 437. - This is the only highland species of the genus in southern Central America, - there are two others known at sea level. I have seen the following collections:

Costa Rica: Allen 5431 (US); Brenes 6684 (F), 22668 (F); Burger & Liesner 6284 (F), 7104 (F); Carlson 3438 (F); Donnell Smith 4771 (US), 6591 (US), 6592 (F, US), 6593 (US); Escheveria 585 (F); Gomez 2332 (F); Lent 1417 (F); Leon 72 (F), 763 (F); Pittier 11155 (F, US), 12071 (US); Pittier & Tonduz 8954 (US), 9395 (US); Rowlee & Stork 852 (US); Skutch 2422 (US), 4116 (US), 4634 (F, US), 4783 (US); Standley 36177 (US), 37569 (US), 39594 (US), 42506 (US), 42539 (US); Standley & Valerio 43117 (US); Stork 1853 (F); Webster et al. 12185 (F); Williams 16305 (F, US), 16306 (F, US); Williams et al. 28771 (F, US).

Panama: Allen 1575 (US, F), 1733 (US, F); Blum & Dwyer 2543 (F); Davidson 81 (F), 476 (F, US), 815 (US).

SOMMERA DUNLAPII L. Wms. sp. nov. - Arbuscula, rami pilosi glabrecenti. Folia oblongo-oblancheolata acuminata sparse pilosa glabrecentia ad bases attenuata, petioli graciles; inflorescentia axillaris cymosa; calyx campanulatus strigosus 5-lobatus, lobi oblongo-ovati obtusi; corolla tubularis, lobi angusti triangulares carnosius extus leviter strigillosi intus floccosi; stigma bilamellatum subglobosum strigillosum; fructus deciduatur.

Small trees, the branchlets pilose at first, soon glabrous, the internodes about 2 cm. long. Leaves oblong-oblancheolate, acuminate, sparsely pilose-strigillose especially along the nerves, soon glabrate above, the mature blades 17-25 cm. long and 6.5-10 cm. broad, attenuate at the base to a slender pilose petiole about 2 cm. long, lateral veins 12-15 pairs, tertiary nerves prominent on both surfaces; inflorescence axillary, open several-flowered densely pilose cymes; the peduncle about 1.5-2 cm. long, the secondary ones shorter, the bibracteolate pedicels about 1 mm. long; flowers very small; hypanthium strigose, about 1 mm. long; calyx campanulate, strigillose, the lobes 5, oblong-ovate, obtuse, about 1.5 mm. long; corolla tubular, about 5 mm. long and 2.5 mm. in diameter, the tube 3.5-4 mm. long and the narrowly triangular acute fleshy lobes 1-1.5 mm. long, sparsely strigillose outside, densely floccose inside in the throat and tube; stamens attached above the base of the corolla tube, floccose, the anthers slightly exerted from the throat; the style about 2.5 mm. long, the stigma bilamellar, subglobose, conspicuously strigillose and 1 mm. long; fruits not known.

Panama: Small tree, Changuinola valley, January 17, 1924, V. C. Dunlap 351 (type F; US).

It is a pleasure to name this most distinctive of the Sommeras for Dr. Vining C. Dunlap, scientist, friend and colleague in Honduras for many years.

This is by far the smallest flowered of the Sommeras and this characteristic easily separates it from all others. There are three species of Sommerera in Costa Rica and Panama, one in the highlands, S. donnellsmithii, and a distinctive and different one on each of the two coasts. This species is certainly to be found in Costa Rica for the type locality is near the boundary of Panama and Costa Rica. The other species in southern Central America is S. rivularis, described below.

Apparent domatia in the nerve axils on the lower leaf surfaces seem not to have been occupied.

SOMMERERA FUSCA Oersted ex Standl. Journ. Wash. Acad. Sci. 17: 339. 1927. - This species is known to me only by the type specimen, a collection made by Liebmann at Jocotepec (US) or Jocoaltepec (C, phototype), - doubtless Jocotepec, Oaxaca. The species is distinctive by the relatively small acute leaves, and the short umbelliform-cymose inflorescence, the oblong or oval and obtuse calyx lobes.

Mexico: Liebmann 11720 (US; phototype, F22869).

SOMMERERA GRANDIS (Bartl. ex DC.) Standl. N. Am. Flora 32: 145. 1921. Petesia grandis Bartl. ex DC. Prodr. 4: 395. 1830. Sommerera subcordata Standl. l.c. 144.

The type of Petesia grandis has not been available to me but the description given by de Candolle by chance happens to be quite incisive. De Candolle says calycis limbus 5-fidus deciduus. Haenke, who collected the type specimen, went from Acapulco to Mexico City and returned by the same route. There is only one species of Sommerera in the area which Haenke visited, to the best of my knowledge. There is no other species in which the fruiting calyx is deciduous. Other characters mentioned by de Candolle, while not necessarily incisive, apply very well to the plant which I am calling S. grandis. The range of the species extends down the Pacific side of Mexico from Nayarit, Jalisco and Colima through Michoacan and Guerrero to Oaxaca. The name has been applied to nearly all species of Sommerera at one time or another. I have seen the following material:

Mexico: Collins & Kempton 45 (US); Gentry & Gilly 10672 (MICH); Hinton 10419 (MICH, F) 10586 (MICH), 13940 (F, US), 14321 (US, MICH); Jones 322 (F, US); McVaugh 16095 (MICH), 18973 (MICH), 19231 (MICH); Mexia 537 (US), 693 (US); Morton

& Makrinus 2353 (US, F), 2462 (US, F), 2492 (US); Ortega 42 (US), 5024 (US); Palmer 1324 (US); Rose 3211 (US); Ryan & Floyed 22 (MICH); Rzedowski 15110 (MICH), 17370 (MICH); Sesse & Mocino 1581 (F), 5486 (F).

*SOMMERA GUATEMALENSIS* Standl. Contr. U. S. Nat. Herb. 17: 436. 1914. - The commonest species or at least the most often collected one in Guatemala. It is a wet forest species, mostly in the highlands from 350 to about 1,600 meters. Closely related to *S. arborescens* Schlecht. from eastern Mexico. I have seen the following specimens:

Guatemala: Donnell Smith 1737 (US); Hatch & Wilson 204 (F); Molina and Molina 12153 (F), 12263 (F); Standley 70573 (F), 70887A (F), 71199 (F), 90295 (F), 90757 (F); Steyermark 49419 (F), 49517 (F); Tuerckheim 1444 (US), 1754 (US), 8225 (US, F); Williams & Wilson 40740 (F).

*SOMMERA MONTANA* L. Wms. sp. nov. - Frutices aut arbusculae usque ad 15 m. altae. Folia oblanceolata vel obovata acuminata membranacea, petioli leviter strigosi; stipula lineari-lanceolata acuminata mox decidua; inflorescentiae axillares sparse hirsutae, cymosae vel paniculatae cymosae, pedunculatae, pedunculi hirsuti; calyx campanulatus 5-lobatus breviter hirsutus aut glabrus, lobi late triangulari acuti; corolla tubularis 5-lobata, lobi lanceolati acuti; fructus desideratur.

Shrubs or small trees 3-15 m. tall and to 15 cm. or perhaps more in diameter. Leaves broadly oblanceolate to obovate, acuminate, rather membranaceous, sparsely strigose on the petiole and veins below, with apparent domatia at the base of the secondary nerves, lineolate tertiary veins prominent on both surfaces, the blade 10-30 cm. long, mostly about 15 cm. and 5-10 cm. broad, the petioles 1-2 cm. long, sparsely strigose; stipules linear-lanceolate, acuminate, about 1 cm. long, early deciduous; inflorescences sparsely hirsute, axillary, pedunculate. few-flowered cymes or paniculate cymes often from defoliated nodes, peduncles mostly about 2 cm. long, hirsute; calyx subcampanulate, 5-lobate, sparsely hirsute to nearly glabrous above, about 3-3.5 mm. long, the lobes 1-1.5 mm. long, acute, broadly triangular; corolla tubular, 5-lobed, sericeous externally except at the base, about 8 mm. long at anthesis, the lobes lanceolate, acute, about 2.5-3 mm. long, throat pilose; the stamens inserted at about the middle of the tube, anthers 1-1.5 mm. long, the filaments short, pilose; the style about 4 mm. long, the stigma obscurely pilose; ovary annulate at the apex; fruits not known.

Honduras: "clavito," flores blancas, arbol 8 m., margen de la Quebrada de la Paz, en medio de la floresta de pino-liquidambar de la Montana Zanquin, Depto. Morazan, alt. 1,600 m., Mayo 14, 1950, Molina 2829 (type, F; EAP, US); "clavito," arbol 15 m., floresta de pino-liquidambar de la Montana de Zanquin, Depto. Morazan, alt. 1,600 m., Mayo 14, 1950, Molina

2854 (F, EAP, US); arbusto 3 m., Quebrada de la Paz, bosque de liquidambar de la Montana de Zanquin, Depto. Morazan, alt. 1,600 m., Mayo 23, 1950, Molina 2979 (F, EAP, US).

Possibly the same is Yuncker et al. 8750, an immature specimen from the department of Atlantida.

A montane species related to Sommerera guatemalensis but easily distinguished by the smaller flowers with quite different calyx and corolla. The locality has many endemic montane species.

SOMMERA RIVULARIS L. Wms. sp. nov. - Arbuscula usque ad 10 m., ramuli strigosi mox glabrati; folia anisophylla oblongo-ovata vel elliptico-ovata acuminata ad basem acuta vel obtusa, longe petiolata, petiolus gracilis strigosus; stipula lineari-lanceolata; inflorescentiae breviter pedunculatae pauciflorae axillares cymosae aut cymosae paniculatae pubescentes; calyx campanulatus 5-lobatus strigosus fere ad basem divisus, lobi oblongo-ovati vel suborbiculares reticulati; corolla tubularis extus canescenti-strigosi, lobi erecti lanceolati-ovati acuti intus pubescentes; fructus ovoideus strigosus.

Small bushy trees to about 10 m. tall, the branches strigose pubescent soon glabrous; leaves of a pair subequal, oblong-ovate or elliptic-ovate, acuminate, acute to obtuse at the base, long petiolate, the blade glabrous above, sparsely to densely strigose on the primary and secondary nerves below, 20-30 cm. long and 9-20 cm. broad, the petiole slender, strigose, 3-5 cm. long; stipules linear-lanceolate, to 3.5 cm. long, soon deciduous; inflorescences short pedunculate few-flowered axillary cymes or paniculate cymes to about 5 cm. long, pubescent, peduncles mostly 1-2 cm. long, flattened or subulate; calyx campanulate, 5-lobate, strigose but less so above, divided almost to the base, 5-6 mm. long, the lobes oblong-ovate to suborbicular, somewhat unequal, about 3-3.5 mm. long and mostly 2-2.5 mm. broad, persistent in fruit, reticulate veined; corolla white, tubular, canescent-strigose outside, about 8-9 mm. long, the lobes erect, lanceolate-ovate, acute, 2-2.5 mm. long and about 2 mm. broad, inner face of lobes and throat pubescent, glabrous at the base; stamens inserted at the middle of the tube, anthers about 1 mm. long, filaments very short, comatose; immature fruits ovoid, strigose, about 1 cm. long, calyx persistent.

Costa Rica: flowers white, bushy tree 30 feet (tall), locally frequent along fast flowing streams, Rio Esquinas, near km. 32, Prov. Puntarenas, alt. 30 m., December 8, 1949, Allen 5431 (type, F; EAP, US).

A lowland species from the Pacific rain forest area. It is distinguished by the relatively large leaves, the corolla only slightly longer than the calyx, the broad reticulate calyx lobes which are persistent. It is interesting that three species of Sommerera occur in the Costa Rican-Panamanian area,

a relatively well-known one, Sommeria donnellsmithii, from the highlands (to which this lowland species is related). A little known one from the Pacific lowlands, here described, and another known from a single collection from the Atlantic lowlands, S. dunlapii described above.

SOMMERA ZYGOCALYX L. Wms. sp. nov. - Frutices usque ad 4 m. alti, ramuli graciles fragiles. Folia oblanceolata acuminate ad basem acuta glabra vel subtus sparse strigosa, longe petiolata; inflorescentiae cymosae pauciflorae axillares, pedunculi perbreves usque ad 1 cm. longi; calyx fere ad basem divisus leviter zygomorphus hirsutus, lobi lanceolati acuminati reticulati; corolla cylindrica hirsuta, lobi breves erecti lanceolati acuti leviter inaequales, fauce albo-lanato; fructus ignotus.

Shrubs to 4 m. tall with long slender weak branches. Leaves oblanceolate, acuminate, acute to the base, long petiolate, the blade glabrous above, sparsely strigose on primary and secondary nerves, 10-15 cm. long and 2-5 cm. broad, the strigose petioles 2-3 cm. long; inflorescences axillary few-flowered cymes mostly shorter than the petiole of subtending leaves, strigose pubescent, peduncle mostly less than 1 cm. long; calyx lobate nearly to the base, somewhat zygomorphic, up to 9 mm. long, densely hirsute at the base, less so above, the lobes lanceolate, acuminate, ciliate, sparsely hirsute dorsally or glabrous, prominently reticulate nerved, 3-7 mm. long; corolla cylindric, hirsute above outside but glabrous at the base, 8-9 mm. long, the short lobes erect or slightly spreading, lanceolate, acute, thick and somewhat triquetrous, slightly unequal, 2-2.7 mm. long, throat densely lanate pubescent, the tube less so; stamens inserted near the middle of the tube, the anthers cordate, about 0.4 mm. long, the filaments very short and nearly glabrous; style reaching to the throat of the corolla, divided to the middle, the stigmas pubescent; fruit not known.

Mexico: streamside, flowers white, shrub with long weak branches, 4 m. tall, Arroyo de Culebras, Yaveo, Dist. Choapam, Oaxaca, alt. 450 m., March 21, 1938, Mexia 9191 (type, F; US); Cerro de San Martin, Tuxtla, Mai 1845, Galeotti 2682E (F).

Unusual among the species of Sommeria because of the slightly zygomorphic calyx with unequal lobes, the anthers very small, the inflorescence reduced and hardly longer than the petiole of the subtending leaf.